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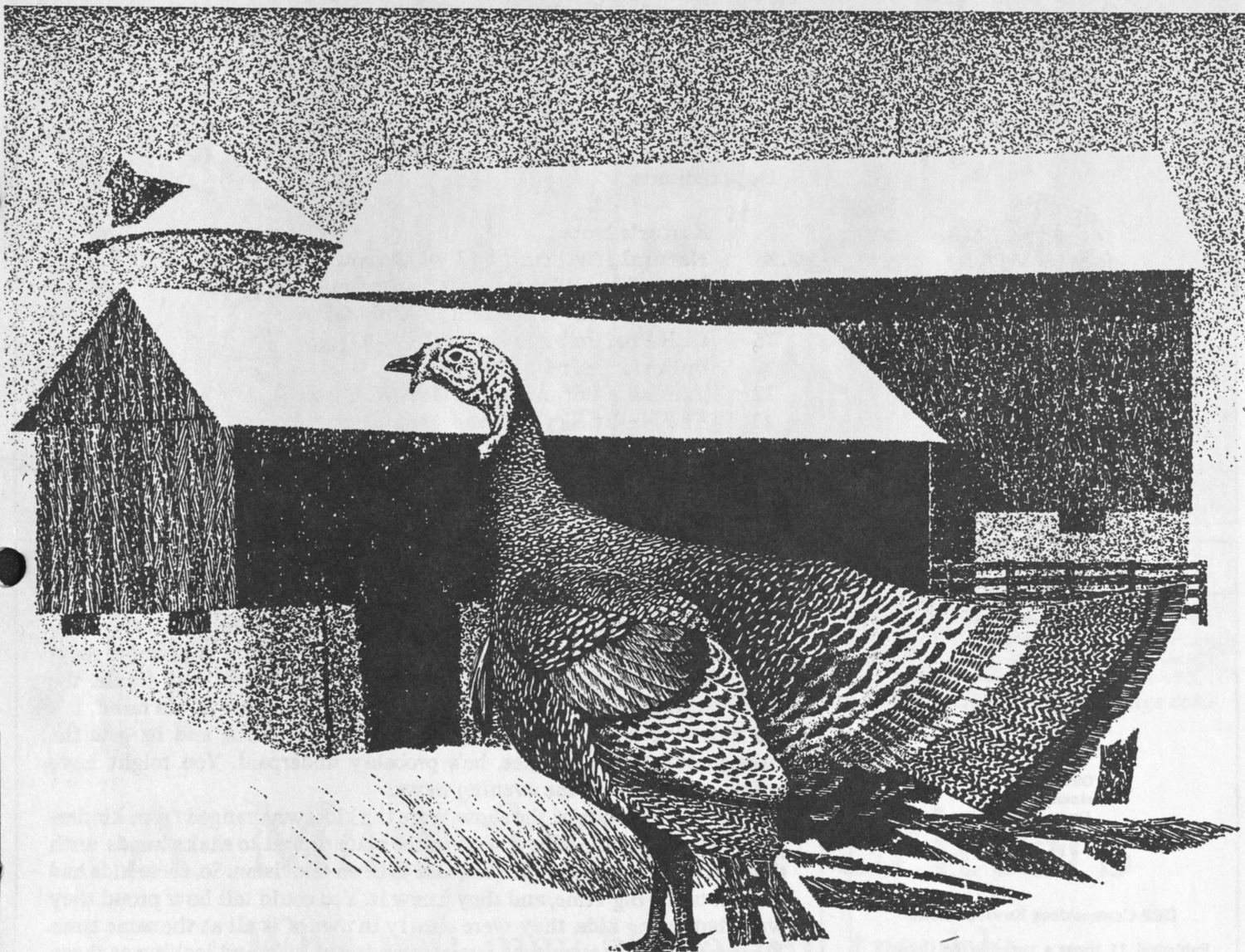


CONNECTICUT

# ENVIRONMENT



The Citizens' Bulletin of the Connecticut Department of Environmental Protection



## The Wild Turkey In Connecticut to stay

January  
1989

# CONNECTICUT ENVIRONMENT

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## Editor's Note

Last month, here in Hartford, the DEP sponsored a rather well-orchestrated event to honor school kids for their efforts to promote recycling. The governor, the commissioner of the DEP, and Ray Cycle, the DEP's recycling superhero, showed up. Ray Cycle is out of his mind, but the kids love him, he can get grownups to rap dance, and he gets the message out. So, on balance, he's probably underpaid. You might have caught the event on the evening news.

But the real stars of the show were the kids, who ranged from kindergarten to sixth grade. They were in the state capital to shake hands with the governor, to get gold plaques, and to be on television. So, these kids had made it to the Big Time, and they knew it. You could tell how proud they were, but, being kids, they were clearly in awe of it all at the same time. They were honest, pure, true, sweet, wonderful kids, and looking at them, you just had to feel a little better about things.

As I watched them, the inner scene shifted a million miles and a million years, to a place where a long, detailed interrogation was going on. There was a short break from the drudgery of fine-tuned intelligence gathering, during which a high-ranking, hard-core enemy officer looked through a worn copy of *Life* magazine. He came to a story about children, and right then, right at that instant, he lost it. It all came apart for him, and he began to cry. "How can American children be so beautiful?" he said.

It's 1989. The new year. And, while there are times when the reason for it is less than crystal clear, a number of us seem to have made it this far. That being the case, one possible course of action — strictly provisional, of course — might be to do what we can to keep the world clean and safe for these honest and beautiful kids.

R.P.





*Much of the business of nuisance wildlife relocators involves creatures like the fellow pictured here. Garbage cans are an open invitation to raccoons. (Photo: L.L. Rue III.)*

# A Man for All Critters

Why you may be having trouble  
finding marshmallows.

by  
Laura Blake  
Environmental Intern

**T**HE STORES IN EAST HAMPTON are out of marshmallows again. East Hamptonites who love marshmallows will have to step aside for their neighbor, who uses them professionally; marshmallows are a favorite of raccoons. So, if you spend a lot of time with

raccoons, inevitably you will need a lot of marshmallows. Ask Skip Hilliker. He knows.

"Raccoons go right for the marshmallows; they are very attracted to things that are sweet," says Hilliker. Skip Hilliker is a volunteer licensed by the DEP to relo-

cate nuisance animals. The DEP's Bureau of Wildlife frequently receives complaints from homeowners regarding small animals. There are simply not enough people in DEP to handle all the complaints or to provide on-site assistance. For that reason, the DEP licenses wildlife enthusiasts to live-trap and relocate the animals in suitable areas far enough away to keep them from returning. There are only 14 individuals statewide who provide nuisance wildlife control service strictly on a volunteer basis. The DEP also licenses 44 nuisance wildlife control operators, who are authorized to charge for their service. Hilliker works primarily in the East Hampton area, but moves around a great deal when relocating animals; in the past two years, Hilliker has logged 52,000 miles on his pickup truck. He traps and frees over 1,000 animals of all kinds each year.

**H**ILLIKER BEGAN DOING THIS TYPE of volunteer work out of his home in East Hampton in 1981. For six years before that, he was dog warden for the

town and also responded to the occasional raccoon or woodchuck complaint. Thus, a career was born. Today, his excellent reputation results in phone calls for help at all hours, day and night. A telephone answering machine was the only way for Hilliker and his wife, Beverly, to contend with the number of calls. Even now, they find the number of requests to be overwhelming and often refer people to other trappers in the area.

Requests come mostly from trouble caused by small animals like raccoons, woodchucks, squirrels, or beavers, with an occasional opossum, snake, or bat popping up as well. Whatever is causing the problem, from a family of squirrels gnawing through a roof to a bat flying around the attic, Skip Hilliker is the man to call.

Animal relocation is not Hilliker's bread-and-butter job. He does it because he loves it and feels it is important. He also believes people should not have to pay for his services. Yet, there are bills to pay. With a full-time job as a supervisor for Northeast Utilities, Hilliker is usually up at 5:00 a.m., checking traps and bringing in new animals. He and Beverly also care for sick or injured



*Adult and young beaver near the lodge. By damming up culverts, beavers frequently cause problems for highway maintenance crews. (Photo: L.L. Rue III.)*





*The DEP's Wildlife Bureau gets frequent complaints about small animals like this opossum. At this time in Connecticut, there are only 14 people who do animal relocation on a voluntary basis. (Photo: Irene Vander-molen)*

animals, as Hilliker is also a DEP-licensed wildlife rehabilitator.

**T**HE HILLIKER HOME has revolved around the animals since his days as dog warden. His wife has a part-time job, but spends much of her day caring for the injured or orphaned animals Hilliker brings home. Since Hilliker acquired a license to rehabilitate animals, things have gotten even more hectic. Inside the house are three orphaned raccoons that seem to have adopted, for the time-being, the Hilliker's cat as a substitute mother. It is important to remember, however, that no matter how cute and charming these baby animals are, they should not be considered pets. They are wild animals, and attempts to domesticate them are not only disappointing but are a dangerous disservice to the animal. The purpose of Hilliker's efforts is always to return all animals to their correct place in the wild.

Feeding all of these animals can take a bite out of the couple's earnings, but the Hillikers receive donations of food from friends. Beavers and woodchucks are very frequently the cause of a problem. Garden problems are usually caused by woodchucks, which go for almost any green plant. Raccoons will attack berry trees or bushes

and are well-known for their nightly garbage can raids. "Animals come around when things are easy for them," says Hilliker. "The garbage is left right out on the street, and that's like an invitation to a raccoon." Also, if a beaver starts to build its lodging in the wrong pond or waterway, it can cause major problems in a septic system. Overflows can result which, during winter, can cause dangerously icy roads.

Hilliker spends his spare time — what there is of it — watching beavers and learning about their habits. He has observed and recorded the locations of beaver dens for the DEP survey of the northeast region of the state. There are indications that the number of beaver colonies is increasing. This may cause problems for highway maintenance crews, since the beavers' work dams up culverts.

Hilliker has never been bitten in all his years of handling animals — perhaps the result of the understanding, respect, and admiration he has for them. "I would never want an animal to have to be destroyed because of a mistake I made in handling it."

**H**ILLIKER HAS SOME INTERESTING animal stories to tell. He can tell you about raccoons that recognize traps and toss them over the side of hills, or about the farm in Moodus where he captured over 100 raccoons. There are the midnight phone calls by someone awakened by bats, the capture of which takes a net and a lot of chasing. Recently, while investigating a beaver case, Hilliker and a customer's dog walked down to the pond occupied by the beaver. Along the way, Hilliker lost the dog and started to call for it. Instead of the dog, however, the beaver came to Hilliker. Over the next few



*Skip Hilliker of East Hampton, a volunteer licensed by the DEP, traps and frees over 1,000 animals each year. He does it because he understands, respects, and admires animals. (Photo: Laura Blake)*

weeks, all Hilliker had to do to see the beaver was to call it.

Usually, however, things do not go so smoothly; complications occur. For example, in the case just mentioned, the beaver had already built its shelter for the winter and if the beaver had been removed, there would not have been time to rebuild. In that case, the beaver would freeze or die for lack of food stored for the winter. Fortunately, the decision was made to wait through the winter and try to remove the animal in spring.

Time of year has a lot to do with the removal of animals. Winter is the worst time to remove an animal. During the winter, the animal has little time to find the new shelter and food it will need to make it through the cold. In spring, there are many nursing mothers. If these animals are trapped and removed without their young, the young will die of starvation or from predation. Skip Hilliker tells any client beforehand that he will not remove a nursing mother unless he can take the young as well. An inexperienced trapper, or a homeowner trying to get rid of the animal on his own, may not operate so conscientiously.

**O**VER THE YEARS, Hilliker's animal work consumed more and more of his time. The tape on his answering machine is always filled. In one morning, he may relocate as many as 40 raccoons.

He is now involved in a project to determine the long-range efficacy of animal relocation. By ear-tagging



raccoons that he traps and recording where he removes them, the DEP and Hilliker can find out whether the animals really stay relocated. Raccoons have a strong sense of territory and he has found that in some cases, the animal will return to its original home ground, even over distances of 10 miles. It may be that raccoons will have to be relocated much greater distances.

For now, though, Skip Hilliker keeps at the work he does so well and with such care. If you have trouble finding marshmallows in the grocery, it may be because Skip Hilliker or someone like him is working with raccoons and other critters in your area.

For further information on nuisance animal relocation in the state, please contact the DEP's Bureau of Wildlife at (203) 566-4683.



*A groundhog gazes across the landscape, planning future excavations. The groundhog, or woodchuck, will eat almost any green plant, and is unpopular with gardeners. (Photo: L.L. Rue III.)*





*Nathan Hale was born in Coventry, Connecticut. He was one of the few people who lived, and died, for what he believed in. (Photo courtesy Connecticut State Library Archives.)*

## Nathan Hale: A Connecticut Hero

by Lisa Garfola Environmental Intern

PATRIOTISM is something that seems to come in and out of fashion. Nowadays, we are somehow not as shocked when we read about a family of master spies selling secrets to the Russians, or American soldiers smuggling secrets out of an embassy, or when a young couple endangers our relations with another country in return for a few thousand dollars. While this kind of thing is certainly not the norm, we have come a long way from a time when a young man would stand tall and alone, and would say from the depths of his heart, "I only regret that I have but one life to lose for my country." The man who spoke those words was Nathan Hale. He spoke them in his final hour, just as he was to be hanged by the British. Today, these words

have become the standard by which we measure patriotism and true commitment to a cause. Nathan Hale's patriotism has made him one of our true national heroes. He came from Connecticut.

NATHAN HALE was born in Coventry, on June 6, 1755. After his graduation from Yale College in 1773, he taught in East Haddam and New London. After the Battle of Lexington, Hale gave a speech espousing independence and he received a commission as a lieutenant in the Connecticut militia. Within six months, Hale was promoted to captain. Hale, however, felt he could be more useful to his country in other ways. When the British won the Battle of Long Island, Hale found that

different way. When General Washington asked for volunteers to gather information about the British troops in Long Island, Hale was the only man willing to undertake the mission. Although Captain William Hull attempted to discourage Hale, he proceeded with the mission. Posing as a school teacher, Hale passed the British lines and collected the information Washington needed. As he was returning to American lines, the British captured him and hanged him the next morning, September 22, 1776, without a trial. Before his death, Hale spoke the line for which he has become famous. Hale paraphrased this line from Joseph Addison's *Cato*. Words, as we know, are easy. Hale achieved greatness when he took the words to the next level of hard, life-and-death reality.

FOR ANYONE INTERESTED in the life of Nathan Hale or in catching the flavor and tone of the Revolutionary War era, a visit to the Nathan Hale homestead, located in Coventry, is highly recommended. The Hale family rebuilt the house in 1776, about the time of Nathan's death. The Museum House contains memorabilia from Nathan's life, including his Bible, fowling piece, and shoe buckles. Most of the furniture in the house is from the Revolutionary War era, except for one bedroom, which was decorated in the early 19th century. Nathan's niece Rebecca claimed his portrait was etched into the wall of this bedroom, a claim which prompted George Dudley Seymour, a Hale admirer, to buy the house and restore it to its original condition. In addition to observing the early American furniture and Nathan's possessions, visitors can also examine the china and silverware used by the Hale family. Other memorabilia in the house include a document entitled "The Case of the Pillowcase," a case heard by Nathan's brother, the justice of the peace in Coventry, and money and portraits from the era. Another interesting room in the Nathan Hale homestead is an early 18th century schoolroom where Nathan's younger brother David taught classes. For further information on visiting hours, please phone (203) 742-6917. ■

# Where do the bees go for the

# WINTER



by  
**Lisa Marcinkowski**  
Writing Intern  
Connecticut State Museum  
of Natural History

**C**ONTRARY TO POPULAR BELIEF, most bugs do not fly south to Miami for the winter. Nor do they “hibernate” in little caves like bears. Actually, many Connecticut insects prepare for winter in much the same way that Connecticut humans do; they stock up on antifreeze to keep their motors running in the cold.

An insect’s biggest problem in the winter is not necessarily that it lacks food or shelter, but that it will turn into a little ice cube. If an insect cannot maintain critical body temperature, then ice crystals form in its cells, according to Charles Henry, professor of ecology and evolutionary biology at The University of Connecticut. Ice formation causes the cells to lose their “structural integrity,” or break down. Upon thawing, the bug turns into mush. Antifreeze in the body fluids helps to combat this.

**I**NSECTS CANNOT JUST STOP in at the corner bar to fortify themselves with a nip of antifreeze now

and again, so they produce the substance internally. The predominant antifreeze agent in adult insects is glycerol, an alcohol made from sugar. The production of glycerol is triggered by the decreasing amount of daylight in the autumn, not by changes in temperature. The level of antifreeze in an insect’s blood increases as the days shorten; in some species it may make up to 25 percent of the body weight. By lowering the freezing point of the body fluids, glycerol can help insects withstand subfreezing temperatures. Some Connecticut insects can survive temperatures as low as minus 20 to 30 degrees Celsius (or four to 22 degrees below zero Fahrenheit), according to David Wagner, an entomologist in the Department of Ecology and Evolutionary Biology at The University of Connecticut.

But even a healthy amount of antifreeze does not guarantee the survival of insects through the winter. That also depends on environmental factors, such as food and moisture availability, the presence of an insu-

lating snow cover, and the effectiveness of the shelter the insect finds. Other biological processes, like the life stage of the insect and hormonal and behavioral changes, affect the outcome too. Over thousands or millions of years, insects have evolved to either live through the winter or provide for survival of the species in other ways.

**M**ANY INSECTS OVERWINTER in the egg stage. Eggs remain dormant all winter, carefully protected from the elements in places like tree bark and under the soil. Insect eggs also can withstand freezing through supercooling, according to Professor Henry. Supercooling is made possible by the presence of certain amino acids and glycerols in the blood. Supercooling allows the body fluids of an insect to remain liquid below the freezing point by causing cell nuclei to dissolve. These nuclei would otherwise serve as foci for the freezing process, giving ice a place to begin crystallizing in the cell.





*Beetle pupa encircled in sawdust chamber. Many beetles and other insects survive the winter in similar cells under bark of trees or logs. (Photos courtesy The Connecticut Museum of Natural History.)*

Insects that spend the winter in the pupal stage are also "supercool." If timed correctly, the cocoon stage is ideally suited to overwintering. These bugs can pass through the cold weather wrapped up in a blanket of sorts and emerge in time for spring. If, however, an insect finishes developing before spring, it has very little chance for survival.

Mayflies and other aquatic insects remain in their underwater resorts in the larval stage, the least common life stage to overwinter. Larvae that survive the winter are rare but successful because they take advantage of water's ability to hold heat. Since water temperature does not change as drastically as air temperature, it acts as a natural buffer for the vulnerable nymphs.

Very few Connecticut insects are especially equipped for overwintering in the adult stage, exceptions being the earwig and the lady beetle. Adult insects that cannot lounge around in a pool search for heat elsewhere. Elsewhere can mean your house. Enjoy your good luck if the red admiral or the mourning cloak, two of Connecticut's beautiful butterflies, decide to follow you home. They like to wedge themselves into a dark corner of the garage, according to Wagner. There may be a problem, though, if a queen yellow jacket or seed bugs find your

garage very attractive. The woodpile stacked against the house may also become a bug condominium in the winter.

**H**ONEY BEES CREATE their own heat within the hive, drinking their honey for energy, and "doing their aerobics," as Wagner puts it. The community "shivers" (or contracts their wing muscles) in a group effort to maintain a fairly constant

temperature in the hive. If the bees run out of food, however, the workers begin to die off. Honey bees are unusual in that many workers can survive the winter along with the queen. For other social bees and wasps, only the young reproductive females survive to set up a new colony in the spring. The sterile males, the old queens, and all the workers die each fall. Ants, another group of social insects, dig deep into the ground, stock up on food, and huddle together to maintain contact with their nestmates. Carl Rettenmeyer, director of The Connecticut State Museum of Natural History at The University of Connecticut, told of a colony of army ants that were found overwintering six feet below the surface, well past the frost line. The average ant in Connecticut does the same, although not quite to such depths.

Many nonsocial insects like beetles practice downward mobility when preparing for the winter. Some move from high altitudes to low ones, while others search for shelter close to the ground under leaves, bark, rocks, and snow. Every time you kick a rock over you may be evicting some poor bug from its winter home. The snow can be both a help and a hindrance to insects. A solid snow cover helps to insulate the ground, but it also makes it difficult for insects to reach food.

Moving downward is as far as

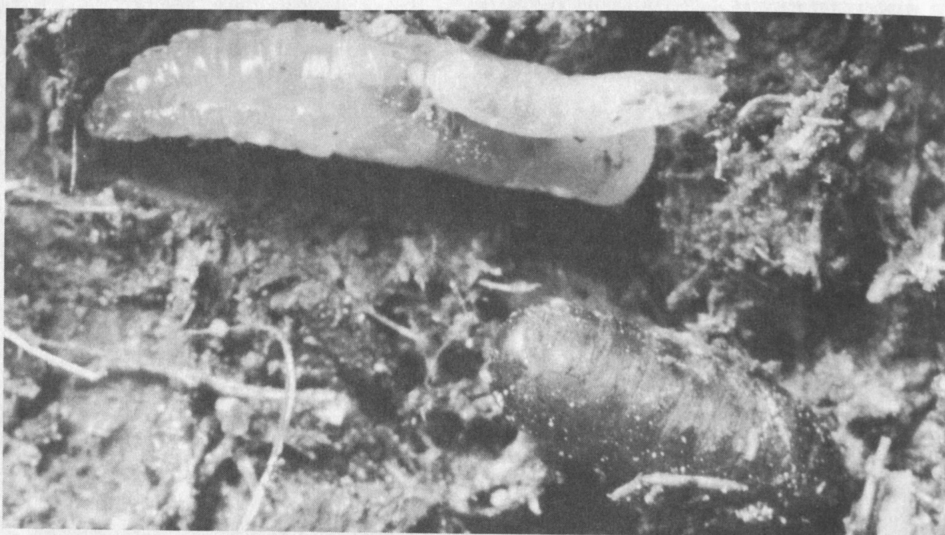


*Beetle pupa under bark shows white wing pads tucked under its body.*

most Connecticut insects migrate. Taking a winter break in Mexico, as the monarch butterflies do, is simply not an option for the majority of insects. Only two to three percent of all insects participate in some form of distant migration. The average lifespan of a bug is one season, so they do not live long enough to make such a trip. The monarch butterfly actually makes the journey during two life cycles. The original migrants get to Mexico and as far back as the southern states, but it is their offspring that repopulate the north.

In fact, not only do most Connecticut insects avoid moving south, they don't move, period. Once some insects find sufficient shelter, they go into a state of diapause or "suspended animation," according to Wagner. Diapause is a complex hormonal change that results in a decrease or a shutdown of an insect's metabolic processes. Insects have to expend a lot of energy warming up their flight or walking muscles in order to move in cold weather, and diapause eliminates this need. Diapause is also a response to the decreasing light period, or ratio of light to dark, in the fall. This process usually goes hand in hand with the production of antifreeze in adult insects.

Other couch potato insects stop moving when the temperature begins

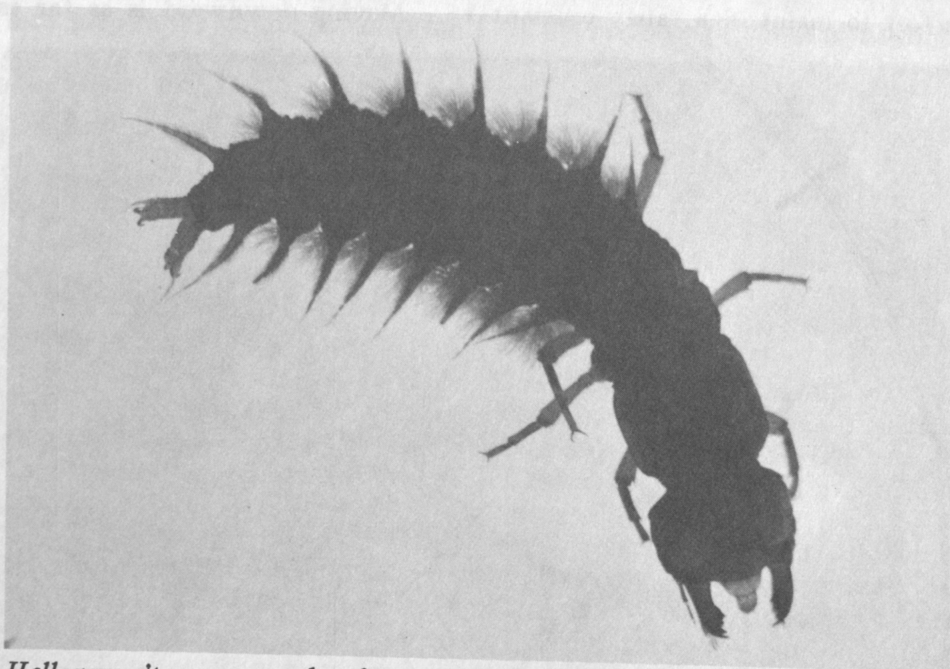


*Fly maggots and pupa in its hard case, called a "puparium," which protects the developing fly from desiccation. This is an example of an insect that overwinters in soil.*

to drop, rather than when the days begin to shorten. This behavioral response is called "quiescence," and it is closer to hibernation than diapause is. Quiescence is another energy-conserving state, but the insects that undergo this one are free to resume their normal activity as soon as the weather becomes warm enough. The insects undergoing diapause cannot change their behavior until the days become long enough and hormonal changes trigger awakening, whether or not the weather is warm.

UNFORTUNATELY, there is no happy ending for the majority of adult insects that attempt to overwinter because their life spans were predetermined to end after one season. Life processes, evolved through natural selection, assure the preservation of the species. Despite the physiological and behavioral precautions they take, most insects eventually succumb to the cold or desiccate. Usually the survival of the few who live more than one season hinges on how long they can find the food to fuel their inner furnaces. Very few Connecticut insects are especially equipped for overwintering in the adult stage, exceptions being the earwig and the lady beetle.

Insects are among the most adaptable animals on earth. Even if Connecticut were to become an arctic region (and some people would argue that it is already), then some bugs would no doubt find ways to survive the longer winters. Here in New England the survival of each species from season to season is in some way guaranteed by the specializations of the eggs, larvae, pupae, adults, or queens, in the case of bees and wasps. The adult insects that survive the winter (less than one percent of the total), provide enough eggs for the continuation of the species. The rest find themselves in the wrong place at the wrong time and literally get the cold shoulder from nature.



*Hellgrammite, an example of an aquatic insect that overwinters in a stream. By staying in flowing water, it will never reach the cold temperatures that will be found on land.*





*Sea Camp is a summer program sponsored by the Long Island Sound Taskforce. Kids learn that the future starts right now. (Photos courtesy of Long Island Sound Taskforce.)*

# The Long Island Sound Taskforce

The future of the Sound starts right now

by  
**Laura Blake**  
Environmental Intern

**I**N STAMFORD, there is a small but very active organization whose goal is the protection of Long Island Sound — the water we fish, sail, and swim in. That organization is the Long Island Sound Taskforce of the Oceanic Society.

Richard Schreiner is currently the director of Long Island Sound Taskforce (LIST) which, among its many other activities, sponsors public projects and educational programs involving the Sound. "Much of our work involves putting people in touch with the right organizations," says Schreiner. With Laura Guzda, director of public relations and a board of trustees, Schreiner is trying to

spread awareness of Long Island Sound; if it concerns the Sound, you will probably find LIST involved.

The Taskforce was originally formed in 1972 as an action arm of the Sierra Club. After becoming an independent organization, based in New York, LIST then became a chapter of the Oceanic Society, based in the Stamford Marine Center. During this period, LIST was involved in the creation of tidal wetland regulations in New York State. It also worked with the DEP's Coastal Area Management Unit to prepare displays and a handbook on coastal management.

In 1985, the Oceanic Society relocated to Washing-

ton, D.C., while LIST remained at the Marine Center. Currently LIST runs two annual conferences, a sea camp for young people, whale-watch weekends, intertidal field studies for school groups, and courses and talks to raise public awareness.

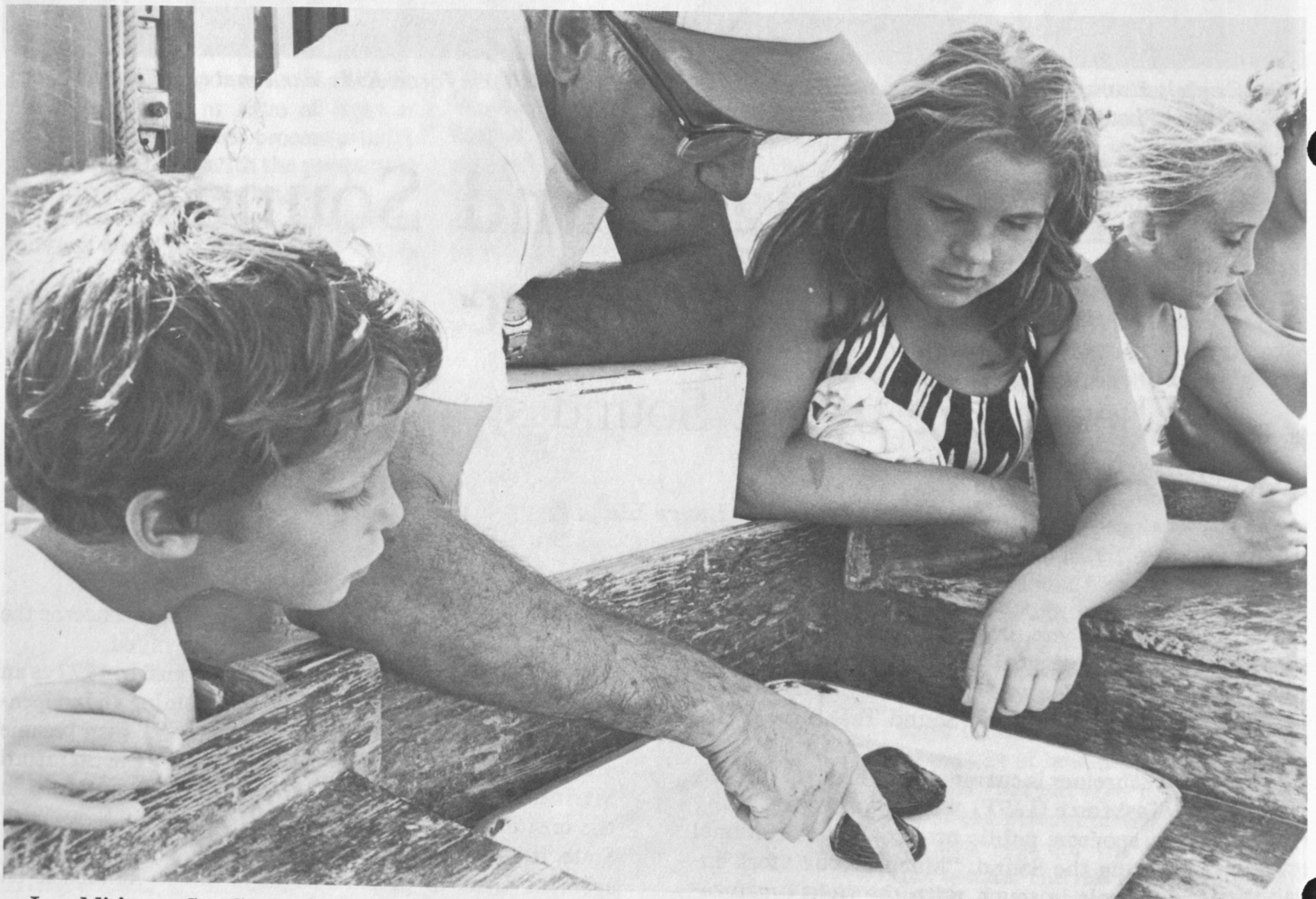
**T**HE LONG ISLAND SOUND STUDY UPDATE (formerly the *Long Island Sound Report*) is LIST's bi-monthly newsletter. It covers all Sound-related issues and up-to-the-minute progress of the Long Island Sound Study (LISS). LIST also publishes *On the Sound*, a bi-monthly calendar of events and membership news. A multi-year, multi-participant study, LISS is funded in part by the federal Environmental Protection Agency (EPA). Toxic chemicals and low levels of oxygen (hypoxia) are two major concerns of the study. LISS differs from previous studies by the inclusion of a management plan to be implemented when the study is complete.

The results of this study were discussed at Long Island Sound Taskforce's 10th annual "State of the Sound Conference" held this summer at the Stony Brook campus of the State University of New York. Speakers on hypoxia included authorities from The University of Connecticut, Harvard University, Connecticut Sea Grant Institute, and

the DEP. Ms. Penny Howell of the DEP's marine fisheries program spoke on the problem of hypoxia in the Sound. Robert Smith, assistant director of the Water Compliance Unit of the DEP, took part in a panel discussion on sewage treatment. This conference, as well as the "Long Island Sound Environmental Conference," is co-sponsored by LIST.

**C**LASSES AT THE MARINE CENTER in Stamford involve the study of the marine life of the Sound. Trips to the shore and a large tank located in the Center make identification and observation easier for students. Grade school level programs are conducted at LIST's Sea Camp, a day camp that provides exploration and teaching along with games for the campers.

"The future can start right now with these youngsters," says Shreiner. One of the most popular activities at the Sea Camp is a trip out on the Sound to examine and collect specimens of marine life. Trips on the Norwalk Maritime Center's vessel *RV/Oceanic*, and to places like Cove Island, West Beach, and Sherwood Island, provide the campers with materials for another big part of the camp. All campers care for an aquarium that houses sea



*In addition to Sea Camp, LIST runs two annual conferences, whale-watch weekends, field studies for schools, and many courses and talks.*





*In protecting Long Island Sound, LIST is a focal point for many concerned individuals and organizations; if it concerns the Sound, you will probably find LIST involved.*

creatures they decide on. Campers learn which animals live best together and under what conditions.

LIST regularly sponsors courses with speakers from New York Aquarium, State University of New York, University of Connecticut, and Fairfield University. In 1987, LIST sponsored a 14-session graduate-level course at Fairfield University, titled "The Natural History of Long Island Sound," with talks by university personnel and authorities from state agencies. Speakers from the DEP included Ralph Lewis on the geology of the Sound, and John Volk and Eric Smith on commercial fisheries.

Also, this organization — which was originally designed for civic action — still keeps an eye on public policy. Director Schreiner would like to see an increase in LIST involvement along those lines. "In the future, I'd like to help the organization to serve our constituency even more efficiently." This includes increasing membership, which now consists mostly of people from the Westchester and Fairfield County areas. LIST has been important in contacting the right agencies in time to stop environmentally damaging projects. LIST worked with other agencies in contacting the Norwalk Seaport Association's board of trustees and the press to stop a proposal to erect moorings along Sheffield Island. The proposal would have been damaging to the shellfish beds of the

island. Soon after this information was made public, the proposal was withdrawn.

LIST is a member of the Jay Coalition; the Jay property is adjacent to the Rye Marshlands Conservancy that stretches 286 acres along the western coast of the Sound. The property holds the only large and healthy tidal marsh between New York City and Sherwood Island. It is also home to many unique species of fish and wildlife. Updates on the work of the Jay Coalition appear in the LIST newsletter, as will as addresses for those who wish more information or contacts.

**S**CHREINER PREDICTS THAT LIST will be involved in much work similar to this in the future. He and Public Relations Director Guzda feel the best way to increase public involvement is to increase membership. An increase in support would help LIST reach some future goals, such as creating an annotated bibliography of the Sound, and an educational package on the Sound, with a video and teacher's guide.

For further information on the Stamford Marine Center — classes, trips, or membership — please call (203) 327-9786 or write: Long Island Sound Taskforce, 185 Magee Avenue, Stamford, CT 06902. ■

## Getting Down to Bedrock

by

Alan Levere

Senior Environmental Analyst

IT IS THE NATURE of mapping that any given map represents what we know about a subject at one point in time. For instance, a road map only depicts the features that existed at the time the research was conducted, before printing. Mostly, these maps present an image of the surface of the earth — road networks, topography, waterways, houses, etc. Interestingly enough, there is a series of maps that provides not only land surface information, but also data on what is below the area where we live. This series of maps describes the surficial geology of the state.

Surficial geology is simply defined as everything that lies on the bedrock surface, and below what we would recognize as the soil layer (the first 24 to 36 inches below our feet). Of course, in some places there isn't anything that lies above the bedrock. The bedrock is exposed at the surface — what we call ledge, or bedrock outcrops. But, in most places in the state, there is an accumulation of either loose or packed earth/dirt above that bedrock. Surficial geology is the study of these surficial materials.

YOU MIGHT THEN ASK — why is there anything on top of bedrock anyway? It turns out that all this material was left behind by the last glacier.

In general, surficial geology is the last chapter in the glacial history of our state. In other words, the work of yesterday's glaciers is the landscape we live with today. The story is told in *The Face of Connecticut* on pages 122-126 and 137-138. But more detailed studies of local areas can be found in a series of surficial geologic maps published, in part, by the United States Geological Survey (USGS) and, in part, by the Connecticut Geologic

and Natural History Survey (GNHS).

THERE IS NO BETTER way to understand what's below our feet than by reading the surficial geology reports. These reports describe individual areas in the same format grid as the topographic maps, and there are 116 topographic maps that cover the state in its entirety. Of those 116 quadrangle areas, 71 have surficial geologic studies completed.

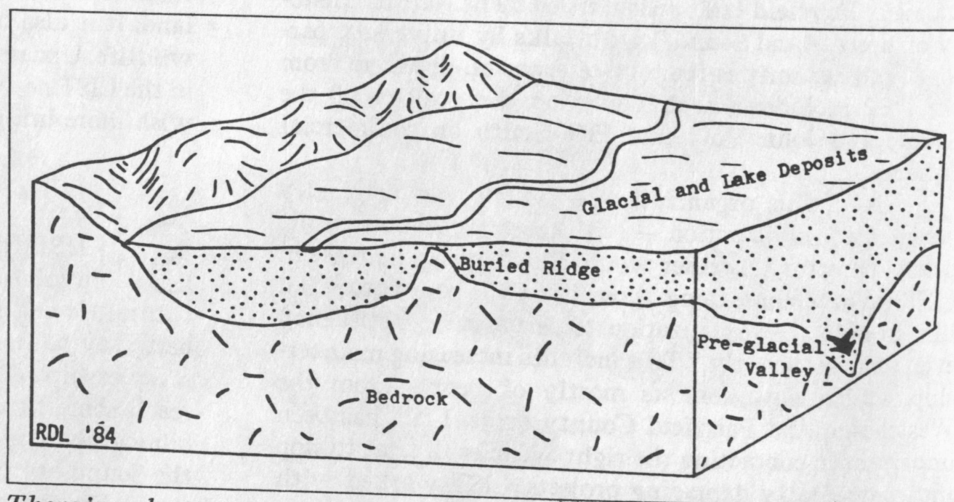
These studies are available in two different formats. The first, and my favorite, are the ones that the Connecticut GNHS prepared. They are called Quadrangle Reports. Included with the color map is a booklet in six inch by nine inch format, that describes the geology, drainage, glacial-erosional features, the nature of sediments that running water may have sorted out, and the resulting economic geology (sand and gravel deposits, for example). Generally, three to eight photos and maps help round out the text; reports range in length from 18 to 40 pages. There are 16 quadrangles written in this format.

SINCE GEOLOGY IS A SCIENCE, there is some terminology that, from the outset, might tend to stop your forward progress. Don't let this deter you. We can include a short glossary for anyone who requests it.

The other format was produced by the USGS. These maps are the Geologic Quadrangle Series. For the most part, these are maps with descriptive text or legend information in the margins, or in some cases covering the entire back of the map. There are 55 quadrangles done in this format. Sometime in the future, this column will describe a specific map in detail.

In all, there's a lot that has gone on underfoot. Glacial accumulated deposits affect everything we do here in the state. If you care to pursue this, drop us a note and request our surficial geology flier (no charge). It has a map indicating all the quadrangle areas that have been mapped, a glossary of terms you will need to understand the text, and ordering information if there is a favorite spot you would like to investigate. Our address is: DEP-NRC, Map Sales, Room 555, 165 Capitol Ave., Hartford, CT 06106.

If you are curious enough, there is a surficial report for the Hartford South quadrangle area; its colorful map and 41-page accompanying text will give you a flavor of what this surficial geologic mapping is about. All surficial reports are \$3.65, and *The Face of Connecticut* is available for \$12.95. Please include \$2.00 for handling and 7 1/2 percent sales tax. ■



*There is no better way to understand what's below our feet than by reading the surficial geology reports. Shown here are glacial and pre-glacial geologic formations. (From Dinosaurs, Dunes, and Drifting Continents by Richard D. Little.)*



# Gearing Up to Recycle

by

**Kim Marcy**

Recycling Education Coordinator

CONNECTICUT'S RECYCLING program is making headway in reaching the 1991 statewide mandatory recycling level of a 25 percent reduction in the solid waste stream. Current efforts include feasibility studies, facility upgrades, and the siting of intermediate processing centers. Legislation was passed in 1987 to require the recycling of 25 percent of the solid waste stream by January 1, 1991. Items to be recycled by 1991 include: glass and metal food containers, office paper, cardboard, used motor oil, scrap metal, car batteries, and leaves.

TO PROCESS HOUSEHOLD recyclables, Intermediate Processing Centers (IPCs) have been proposed for regions of about 400,000 residents. These centers will process co-mingled bottles and cans, and sometimes newspapers and cardboard, and prepare them for their respective markets. With IPCs, larger quantities of recyclables are available on a consistent basis; therefore, markets are easier to establish and maintain and materials can be prepared to market specifications. The processed recyclables are ultimately used in the manufacture of new products, saving natural resources and energy.

At this time, the only IPC operating in the state is in the Southeastern Region. A facility upgrade is under way at the IPC in Groton and will be completed by year's end. At that time, the facility is expected to be able to process 40 tons/day of bottles and cans. Municipalities have applied for and been approved to receive funds from the Southeastern Connecticut Regional Resources Recovery Authority

(SCRRRA) and DEP for collection and composting equipment. In addition, portions of town budgets have been committed to recycling staffing, collection, and publicity, and several towns are developing or implementing mandatory ordinances. Best of all, participation is increasing in the southeastern demonstration region.

THE FIRST DRAFT of a program design for the South Central Region has been reviewed by regional officials and the DEP. The proposed program emphasizes the development of a processing center for household containers with transfer capacity for paper. Sites are being considered and a regional entity to manage the construction and operation of the recycling program is under consideration.

The DEP has entered into a contract with the Southwestern Region for the design of a comprehensive recycling program, and consultants have begun a program design. A recycling coordinator has been hired and potential IPC sites are being investigated. A regional entity to manage the construction and operation of the recycling program is being considered.

All of the other municipalities in the state are participating in the state-funded regional planning process for recycling. Twelve established regions, in addition to the three mentioned above, have begun to submit feasibility studies to the DEP.

The goal of the feasibility studies is to conduct an inventory of solid waste and recycling information and to form regions with sufficient population base (approx. 400,000) to support regional recycling programs. With the help of feasibility studies, regional affiliation will be determined. Municipalities which choose not to join a region may be ordered to participate if they do not meet the state's recycling goals.

IN ADDITION to the regional programs, a number of special recycling projects are in progress. They include recycling at a state park, a study of

recycling in urban settings (apartments and businesses), composting, and the purchase of recycled goods by Northeastern states.

Under a pilot program at Harkness State Park, 1300 pounds of bottles and cans have been processed at the Groton IPC.

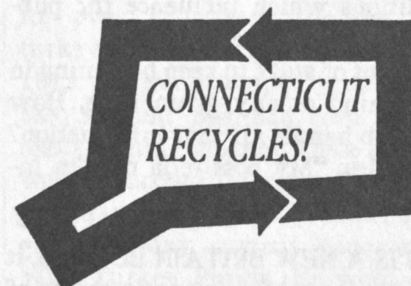
Consultation has begun on an urban recycling project involving the cities of Bridgeport, Hartford, New Haven, Stamford, and Waterbury.

The DEP has contracted with The University of Connecticut Cooperative Extension Service to produce a leaf composting manual for municipal officials. The manual will cover collection and processing systems, marketing and economic analysis. A home composting program in southeastern Connecticut is part of the project. Forty-five volunteer "master composters" have been trained to teach composting.

Finally, a joint effort by 10 states associated with the Northeastern Recycling Council has developed uniform definitions and standards for paper purchases. This will encourage production of paper goods using recycled paper. Participants will meet a year from now to evaluate progress.

A publicity and education plan has been approved. This will include radio and television announcements, video presentations, printed materials, and the training of local recycling coordinators and officials.

A SUCCESSFUL statewide recycling program will require all of these efforts, and more. We must work together to meet the 25 percent reduction of the solid waste stream by January, 1991. Finally, it's up to all of us.



## The Intense Mr. D.

by  
Robert Paier

THE MISSION OF THE DEP is to preserve and protect the land, air, water, and other natural resources for present and future generations. That is an honorable goal and for that reason we in the DEP walk with a certain sense of pride. And it is with that pride that we introduce Bob Dlugolenski to our readers. Bob is the kind of guy the DEP is all about.

Bob Dlugolenski is the DEP's recreational resource coordinator. Basically, Bob's job is to provide technical assistance for the administration and management of municipal parks and recreation departments throughout the state. He assists municipalities in protecting, developing, and utilizing open space resources. This both increases recreation opportunities and decreases dependency on state-provided resources. Bob will address any question, from providing salary comparisons to information on skateboard tracks. "I love this job," says Bob, "because of the diversity, complexity, and challenging technical demands."

What kinds of things do you have to know? "You have to be knowledgeable in the fields of personnel, maintenance, safety and risk management, grant writing, insurance, facility design, bid specifications, and computers. You have to understand psychology, sociology, music, dance, administration, finance, and budgeting. You have to be sensitive to changing social conditions which influence the public's recreational needs."

A lot of stuff to keep humming in your mind at any given time. How does Bob handle all that information? He smiles. "My boss tells me I'm intense."

BOB IS A NEW BRITAIN BOY and, it can now be told, a former member of



*Former Royal Knight Bob Dlugolenski is the DEP's recreational resource coordinator.*

the Royal Knights. In high school, Bob was "an athlete of sorts," lettering in football, tennis, and track and field. At the University of Connecticut, intending to become a football or track coach, he majored in physical education. Then a trusted professor suggested that Bob consider the new field of park and recreation administration. Bob did, and found to his delight that he loved the field.

"While I didn't understand the complexity and diversity at that time," says Bob, "I saw immediately that it would be a constant challenge and absolutely worthwhile. Leisure is critically important to what we call 'quality of life.' I knew I would be making life better and more enjoyable for people."

Graduating in 1966, Bob worked as an aquatics instructor in Willimantic, an assistant director of parks and recreation in Branford, and as director of parks and recreation for the town of North Haven. He held that position for 10 years until 1980, when he signed on with the DEP. He has been here ever since.

THE BASIS OF THIS OPERATION is information," says Bob. "Lots of data must be collected, processed, and made available to professionals in the field." Bob is now in the process of visiting all of Connecticut's 169 towns, both to teach and to learn. "There is no ceiling

to the scope and potential of this. Actually, I'm in diapers now." (Diapers. Odd analogy.)

An area of special concern for Bob is working directly with local citizens' boards on a regular basis. He also conducts an annual training seminar on the role and function of parks and recreation on the municipal level. "I don't want to let people down. Municipal leisure time professionals depend on this office as a reliable source of information and assistance. I want to set up something the state can be proud of and that can grow beyond me."

Does Bob's boss appreciate him? Chuck Reed, director of the land acquisition unit, had this to say: "Bob approaches his job with intensity and seriousness. He is both knowledgeable and a hard worker. He and I have literally talked all night on municipal recreation issues. That's dedication."

Recently, the New England Regional Council of National Parks and Recreation bestowed on Bob an award in recognition of his dedicated service. This was the highest award a professional in this field can receive. Still another recent award was Bob's election to the national board of the American Park and Recreation Society, indicating national recognition. Why was he singled out for these honors? "Maybe because I like to deliver; I like to produce."

WHEN NOT THINKING about parks and recreation (which may not be too often, since his wife Christy is director of parks and recreation in Rocky Hill), Bob likes to spend quiet time around his 1830 federal house, working on his vegetable garden, and keeping track of three ponies and a goat. There are also four children, the most recent being an 11-month-old son. (Aha! The diaper analogy.)

So, that's Bob Dlugolenski — vegetable gardener, occasional diaper changer, and a guy who's absolutely committed to doing the very best he can for the people of Connecticut. One of the guys you run into around the DEP. One of the guys we're very proud of.





*Thanks to the efforts of the DEP's Bureau of Wildlife, Connecticut's wild turkey population is now up to 5,500. Pictured here, a young wild turkey tom. (All photos by Leonard Lee Rue III.)*

# The Wild Turkey Is Back to Stay

by  
Matthew H. Perkins

**T**HE WILD TURKEY is back in force in Connecticut. From an imported fleet of 22 birds in 1975, the

population is now a burgeoning 5,500, thanks to the efforts of many members of the DEP's Bureau of Wildlife,

particularly biologists Steven Jackson and Brian Miller, who worked on Connecticut's Wild Turkey Project. Through research, trapping, and relocation of the birds, wildlife professionals have brought America's wariest game bird back to the forests of Connecticut.

Before 1975, the mighty gobblers of the forest had been virtually silent for over 150 years; the last wild turkey sighted in Connecticut was in 1813. A few attempts, primarily in the '50s and '60s, had been made at reestablishing the bird. These attempts were unsuccessful because "they were game farm birds," said Wildlife Biologist Dale May, current leader of the Wild Turkey Project. He went on to

say that pen-reared birds were too domesticated to survive in the wild.

A combination of deforestation and unregulated hunting was responsible for the demise of the turkey in Northeastern United States, including Connecticut. The rise in agriculture in the 1800s, which left the wild turkey only a fraction of its previous habitat of forest, combined with increased uncontrolled hunting on that smaller area, pinched the wild turkey out of Connecticut.

Since then, Connecticut's forests have grown back significantly, and now has considerable habitat suitable for turkeys. With that in mind, the DEP's Wildlife Bureau began laying groundwork. Twenty-two wild-ranging turkeys were captured in up-state New York and liberated in Canaan. This single release of wild trapped birds laid the foundation for the statewide restoration effort. Once the original flocks of the northwest corner of the state began to prosper, DEP biologists trapped the turkeys by using a 'rocket net' method, so that they could release the birds in another part of the state. The trapping method

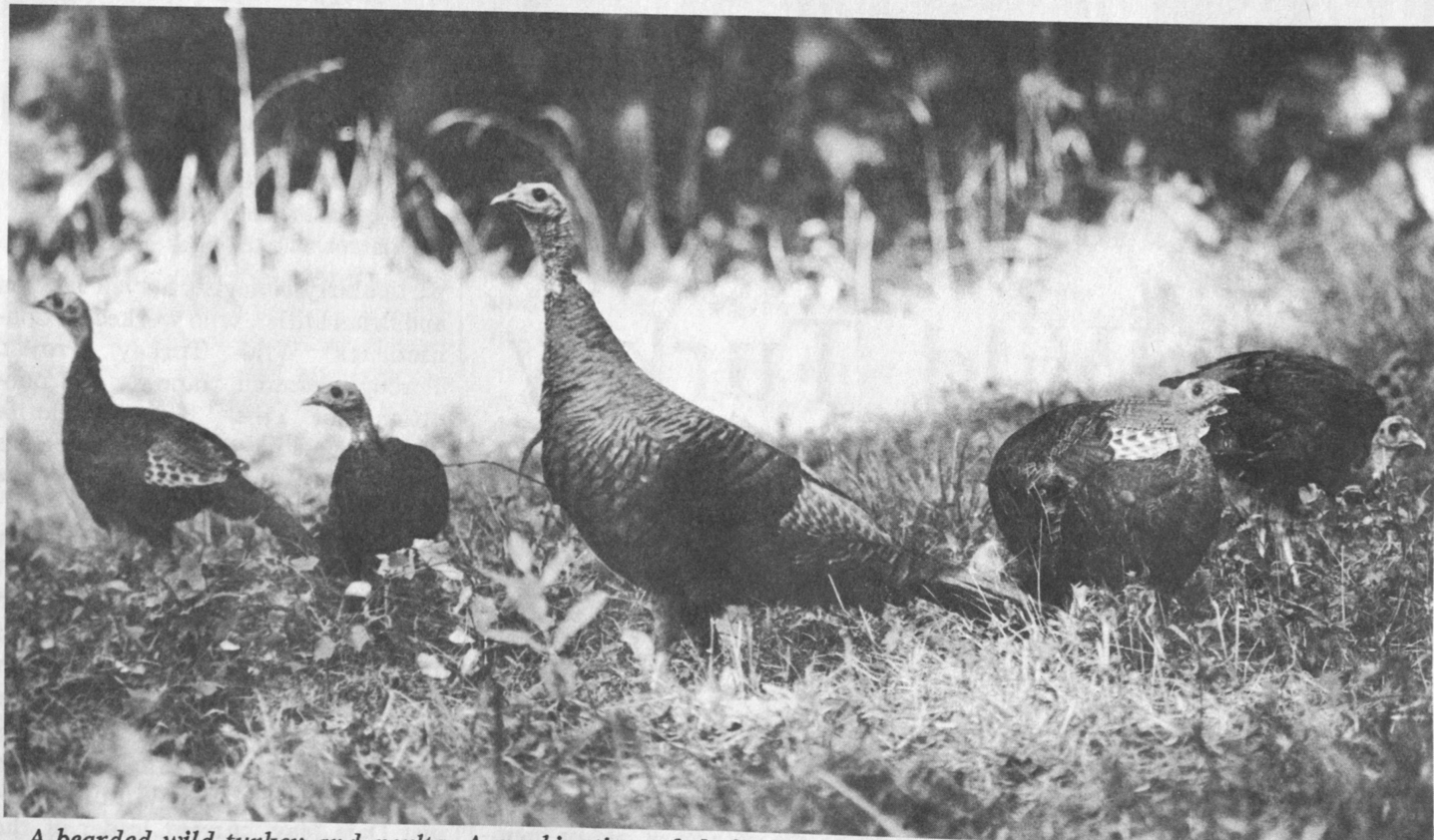
consists of baiting an area with grain and shooting nets out over the area, thus catching an entire flock of birds. Aside from the original release site in Canaan, wild turkeys have been released at 12 other locations throughout the state between 1978 and 1987.

**T**HE COMEBACK that the wild turkey has made has not all been through trapping and releases. The wild turkey is "a very opportunistic bird," added Dale May. He went on to explain that they will eat a great variety of plants and animal foods, including seeds, fruit, acorns, invertebrates, and insects. Dr. George Clark, a professor of ornithology at the University of Connecticut, Storrs, comments that the turkey "is a very wary bird." This wariness keeps turkeys a safe distance away from predators and man. With both wariness and ingenuity, the wild turkey has been able to move into Connecticut for good.

Aside from hunters, the adult male turkey has few predators. How-

ever, there are times when turkeys are vulnerable to attack from other animals. The hens are most vulnerable while on the nest, which is on the ground, and the young chicks are also open to outside attack. May comments that "once the chicks make it through the first four weeks, their chances for survival are good."

Since 1981, hunting has been permitted in areas of the state with healthy turkey populations. This has been not only to utilize a renewable resource, but to collect valuable biological management data. This keeps the turkey wary of man away from backyard bird-feeders. The hunting season is held in the spring, when the hens are on their nests and unavailable to hunters. Hunters are permitted to shoot only the male birds (toms), which the hunters call by imitating the sound of a hen. Because the toms possess exceptional senses of hearing and eyesight, hunter success rates are quite low. Because a tom will mate with as many hens as he can attract, the removal of surplus males by hunting has virtually no effect on population growth.



*A bearded wild turkey and poults. A combination of deforestation and unregulated hunting brought about the decline of the wild turkey population.*





*Two wild turkey jakes. The display of tail feathers is indicative of dominance behavior. It looks like the wild turkey is here to stay in Connecticut's forests.*

The wariness of the wild turkey also makes population estimates difficult. Counts are estimated from the number and frequency of sightings in a given area. The sightings are mainly accidental, made by motorists and woodsmen alike. The state assists in the process by distributing sighting cards to the public as a way of keeping tabs on the expanding flocks.

One thing that these cards show is that the population has not peaked yet, particularly in the eastern part of the state. All that Dale May can do for now is observe and see if there are any large areas that are in need of turkeys, then possibly make another release in a needy area. Currently, turkey popu-

lations radiating from the original release are doing well, and further trap-and-release is not anticipated. Populations have peaked in the northwest corner of the state, while the rest of the areas in the state are expected to peak in the near future.

The comeback of the truly wild turkey has been a remarkable success story for the wildlife management profession. Just 13 short years ago, turkey tracks hadn't been seen in Connecticut for more than a century and a half. Today, the booming gobbles echo from ridgetop to valley each spring, announcing that this noble bird is once again an inhabitant of our forests. And this time, it's here to stay. ■



*A 14-day-old wild turkey. After the first four months, the chances of a wild turkey's survival are good.*

## Jim Murphy Honored

Jim Murphy, principal environmental analyst with the DEP's Water Compliance Unit, received the Connecticut Association of Conservation Districts' (CASWCD) Outstanding Professional Conservationist Award at the association's recent annual meeting. The award is presented annually for outstanding contributions to natural resource conservation.

Presenting the award, Mortimer Gelston, president of the association, said, "Jim Murphy is an outstanding professional conservationist who pursues his work in planning and implementing aquifer protection with clarity of purpose, foresight, and dedication. The association's award program is designed to recognize those who have shown by their actions their commitment to soil and water conservation. Jim Murphy demonstrated his commitment to conservation through his actions."

Murphy developed programs that are at the forefront of groundwater protection on a national level. Utilizing the outstanding collection of resource data compiled by the DEP Natural Resources Center, Murphy visits with local commissions and groups to provide understanding of aquifers,

protection strategies, and local actions needed for conservation.

Murphy is responsible for the Connecticut Water Quality Standard and Classifications program and serves as the state's groundwater coordinator.

CASWCD is an organization formed by the eight Connecticut county soil and water conservation districts. The districts provide technical assistance to landowners and communities on soil and water conservation matters. The assistance is provided in cooperation with various state and federal government agencies. ■

## AIAI Events

The following events are scheduled at the American Indian Archaeological Institute in Washington, Connecticut:

**Saturday, December 31, 1988, 2:30 p.m.** *Wandering through Winter, with Edwin Way Teale.* This is a 50-minute color film of a 20,000-mile journey that begins in California and traverses the country throughout the winter, ending in Maine. This is one of four films by the late naturalist/photographer Edwin Way Teale, who was a longtime Connecticut resident.

**Saturday through Monday, January 7 to 9, 1989, 2:30 p.m.** *Indian Legends: Glooscap* is a 26-minute film that records a segment of the Micmac creation myth, told and acted out by members of the tribe.

**Saturday through Monday, January 14 to 16, 1989, 2:30 p.m.** *A South African Farm* is a 51-minute color film that sheds light on the everyday workings of apartheid. Through interviews with a farm foreman, a butcher, a cook and her husband, a youth in the army, a teacher, and a school principal, the film shows a society in turmoil.

**Saturday through Monday, January 21 to 23, 2:30 p.m.** *Amahuaca: A Tropical Forest Society in Southeastern Peru* is a 24-minute color documentary about the subsis-



tence and ceremonial activities among the Indians in the eastern uplands of Peru. The annual cycle of shifting cultivation is described and we see their harvest ceremony and maize-processing techniques.

**Saturday through Monday, January 28 to 30, 2:30 p.m.** *Our Lives in Our Hands* is a 44-minute color film about the Micmac Indians of Aroostook County, Maine, and the issues they face today. The mechanization of potato farming has dramatically decreased the demand for their baskets, causing concern about the survival of their basketmaking craft. Other topics considered are the survival of the Micmac language and attempts to obtain a tribal land base.

Admission to AIAI is by membership or a donation of \$2 for adults and \$1 for children ages 6-18. The museum is open Monday through Saturday from 10 a.m. to 5 p.m. and Sunday from noon to 5 p.m. For further information, please phone (203) 868-0518. ■





## Environmental Video Tapes

Videotapes on forestry and natural resource management topics are now available from three videotape and copy centers created by the Eastern Connecticut and King's Mark Resource Conservation and Development (RC&D) Areas Forestry Subcommittee and the Cooperative Extension Service.

Educational videos covering a range of topics from chainsaw safety to wildlife management are available from the libraries. Other tapes available include programs on acid rain and forest decline, tree farming in Connecticut, and the growth and management of oak and northern hardwood forests.

If you are interested in a particular topic, you can select a tape and view it in the viewing room at the center. Or, you can leave a deposit and borrow the tape for home viewing. A personal copy of the tape can be made either on your own blank tape or on one purchased, at cost, from the center.

The video libraries are located at:

Bethel Agricultural Center  
67 Stony Hill Road  
Bethel, CT 06801

Connecticut Forest & Park Association  
16 Meriden Rd., Rt. 66  
Middlefield, CT 06457

Brooklyn Extension Center  
Wolf Den Road  
Brooklyn, CT 06234

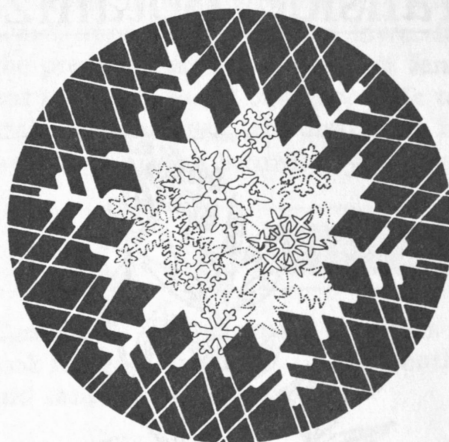
## Environmental Conference

"Conservation and Development: Finding a Balance," the second annual conference concerned with planning, growth, open space preservation, and natural resource protection will be held on February 17, 1989, at the Ra-

mada Inn in Meriden. Featured talks will include an update on the state's land acquisition program by the commissioner of the DEP; a legislative environmental agenda by Representative Mary Mushinsky; an assessment of the costs of development; a review of impact fees and exactions; and discussions of buffers, corridors, and set-asides. The keynote speaker will be from the Conservation Foundation with an outline of the "Successful Communities" program.

A major feature of the conference will be exhibits on geographic information systems, archaeological mapping, endangered species, farmland preservation, and forestland management.

Registration is \$25 and will cover lunch and materials. For further information, please call Nancy Kriz, DEP, 566-7280.



## Ancient Turkey in Westport

Enter the Appalachian Mountain Club "time machine" and be propelled back in time -- in the safety and comfort of your seat -- for an intriguing hour in Ancient Turkey. Just bring yourself, your family, and your friends to the AMC/Fairfield County Group slide presentation on Tuesday, January 10, at the Nature Center for Environmental Activities, 10 Woodside Lane, Westport, Connecticut.

Back by popular demand, world traveler, writer, and teacher Hugh March will present a slide show that'll take you back 4000 years into the deepest interiors of Turkey to visit the pre-historic Hitites, the early rivals of the ancient Egyptians. Tour the Church of Saint Sophia in Istanbul (formerly Constantinople); examine inscriptions and frescos carved by early Byzantines on the wall of their cave refuges in Cappadocia; and explore the well-preserved ruins of ancient cities.

Coffee and conversation begin at 7:15 p.m.; the program at 7:45 p.m.; to be followed by additional refreshments and socializing. Non-members as well as new members are encouraged to attend. The suggested donation is \$4.00 at the door.

## Groundwater Seminars

The Institute of Water Resources at The University of Connecticut is sponsoring a seminar series on groundwater. The seminars will be held at 4:00 p.m. (3:30 for coffee) on The University of Connecticut campus at Storrs in Room 207, W.B. Young Building, College of Agriculture. (The Young Building is on the corner of Route 195 and North Eagleville Road.) The following seminars are scheduled:

February 8, 1989: "Evaluation of groundwater quality in relation to land use for stratified drift aquifers in Connecticut." Steve Grady, U.S. Geological Survey.

March 8, 1989: "Legal aspects of groundwater pollution in Connecticut." Terry Tondro, University of Connecticut Law School.

April 12, 1989: "Realities of groundwater regulation enforcement." Elsie Patton, DEP.

May 10, 1989: "UConn's integrated hydrology model." J.D. Lin and David Miller, University of Connecticut.

Admission is free. For further information, call 486-2839.

## Corrections

The article, "The Appeal of Mushroom Hunting," by Gale W. Carter, which appeared in the November 1988 issue of *Connecticut Environment*, listed the addresses of Connecticut's three mycological societies. That listing was incomplete, and should have appeared as follows:

(1) Connecticut Mycological Association, Route 3, Box 137B Pound Ridge, NY 10576; Connecticut Valley Mycological Association, 169 Edwards Road, Cheshire, CT 06410; and Nutmeg Mycological Society, P.O. Box 530, Groton, CT 06340.

In the December 1988, issue, the following errors occurred:

In the article, "The Life and Times of Israel Putnam," there was some con-

fusion in regard to dates. Israel Putnam was born in 1718, was struck by paralysis in 1789, and died in 1790.

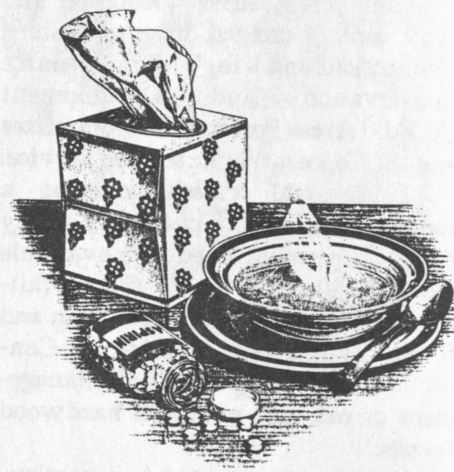
On page 14, the caption for the photo should have indicated that the area at Barn Island is a Wildlife Management Area.

On page 16, an incorrect conclusion was given in regard to Public Act 88-98, regarding the wearing of fluorescent orange clothing while hunting. This act was repealed so the the commissioner of the DEP could mandate clothing requirements, and certain others, via DEP regulations. The wearing of fluorescent orange clothing IS REQUIRED while hunting in Connecticut.

On page 22, the article on eagle watching should have begun, "The Wildlife Bureau, in cooperation with Northeast Utilities, will again open the

Shepaug Bald Eagle Observation Area in Southbury during the 1988-89 season." Also, that article should have been credited to Rita Duclos of DEP's Bureau of Wildlife.

We regret these errors. ■



## Trailside Botanizer

### Indian Hemp

by  
Gale W. Carter  
Illustration by  
Pam Carter

INDIAN HEMP (*Apocynum cannabinum*) and the common milkweed are often confused because of a number of similarities. Both species are found growing along roadsides and in disturbed areas. The flowering time is also much the same, from June to August. In the summer, both plants have milky juice, and when seen in winter the slender fruit pods of Indian hemp may remind one of those of the common milkweed.

In spite of these similarities, there are some very distinct differences between the two species. Indian hemp has a stem which is smooth but tough and fibrous; it branches freely very soon after it comes up in the spring. The stem is usually hairless. Milkweed, however, has a hairy stem that



doesn't branch. There are also differences in the flower and pollen. Indian hemp has a small whitish-green bell-like flower which produces granular pollen. Milkweed has a much more complicated pink to purplish flower and united waxy masses of pollen called pollinea.

Indian hemp belongs to the dog-

bane family, which includes many members that have poisonous qualities. Oleander, sometimes used for roadside plantings, is one example.

Both the family name "dogbane" and the genus name *Apocynum*, meaning "away with the dog," suggest that there is something about these plants that would discourage dogs from coming close to them. They do have poisonous glycosides, but the bitter taste of the plants keeps most animals away.

The early Swedes in America coined the name Indian hemp because they were able to obtain large amounts of rope made by the Indians from the stem of this plant in exchange for small amounts of bread. Rope from Indian hemp was used in making bridles. The plant fibres were also used for thread and in making fish nets, pouches, and bags.

Indian hemp has had many uses in medicine. One of these uses is as a diuretic. In recent years it has been researched because of the digitalis-like properties of its glycosides, chemical in the plant that may prove helpful in treating heart disease. ■



# The Night Sky

## The Planets in January

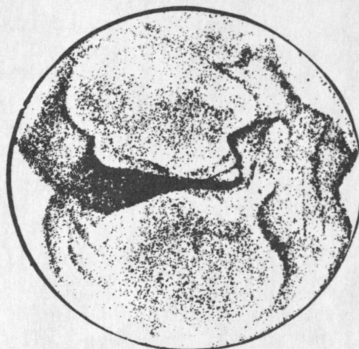
by  
Francine Jackson

THIS MONTH, our neighboring planets are vying for your attention by playing early-morning and evening games of tag. At night, Mars and Jupiter, which have been illuminating the skies since early fall, are beautifully placed for your enjoyment. If you have been observing them the past few



months, you may have noticed that neither planet has stayed fixed; Mars, especially, has traversed a fair amount of sky, and is slowly inching its way toward Jupiter. Keep watching them throughout February and March; as winter passes to spring, Mars will pass Jupiter in the weeks ahead.

In the morning, Venus, the most brilliant planet of them all, has been dominating the sky for months. Now, however, it is slowly moving eastward, appearing lower and lower in the predawn sky. By the end of January, it will be all but impossible to make out. But, before it disappears, it will be joined by Saturn. If you have



a very good horizon, you may be one of the first to see Saturn peeking out of the southeast sky Thursday morning, January 12. It will be just below and to the left of Venus. For the next few days, the two will move toward each other; on Monday, January 16, Saturn and Venus will be so close they will appear as one brilliant body. Venus will then continue sinking slowly in the east, finally disappearing the end of the month. Saturn, on the other hand, will continue to rise and become easily placed for summer observing.

If you look very closely toward Jupiter in the evening, you may see a little clump of stars. The unaided eye will be able to make out six stars; binoculars or a small telescope will raise the number to over a hundred. This is the star cluster called the Pleiades. According to legend, the Pleiades were seven sisters who were so beautiful they were placed in the sky to be adored for all time. But, you recall, the unaided eye can only make out six. One of the sisters came back to Earth and married a human being; for that, the gods extinguished her light. ■

## Letters to the Editor

I read with great interest the article about the White Mountain Apaches and the dancers at the Portland Powwow. Also, your editorial was "right on." Keep up the good work with the magazine.

Priscilla Oliver  
Short Beach

I look forward to every issue of *Connecticut Environment*. It has given me much pleasure and enlightenment. The last issue on the Indians of Arizona was particularly interesting. I am certain your influence on the public to help keep the environment healthy will be felt for many years to come.

Helen S. Gerdes  
Orange

*Connecticut Environment* is superb. I look forward to its arrival each month and read it cover to cover.

Edward R. Mayes  
West Hartford

Yes, yes, yes. Best thing that's happened to us since we moved back to this infernal state. Well, almost.

Patricia A. Pendergast  
Killingworth

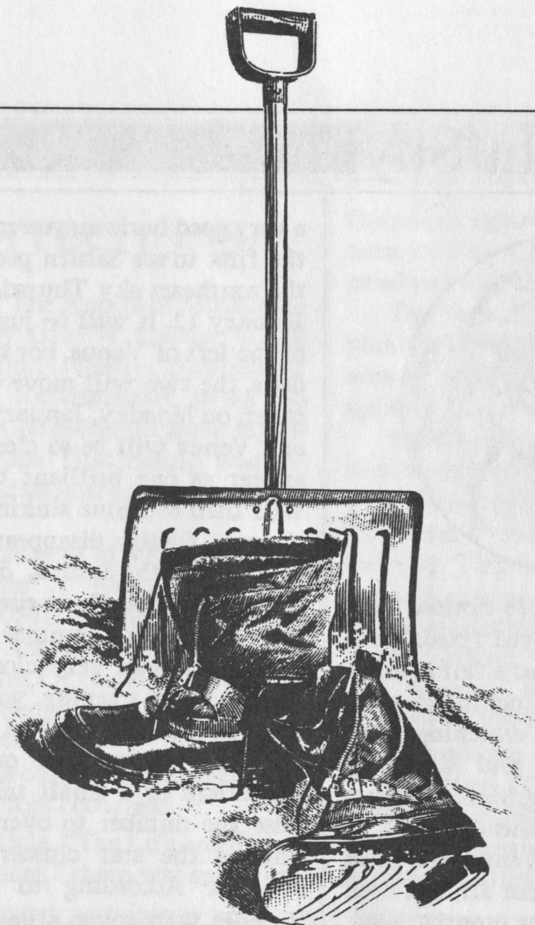
We've been delighted with your publication and feel it deserves a larger audience than it may have.

Jane James  
Essex

## Endnote

The modern hero, the modern individual who dares to heed the call and seek the mansion of that presence with whom it is our whole destiny to be atoned, cannot, indeed must not, wait for his community to cast off its slough of pride, fear, rationalized avarice, and sanctified misunderstanding. It is not society that is to guide and save the creative hero, but precisely the reverse. And so every one of us shares the supreme ordeal — carries the cross of the redeemer — not in the bright moments of his tribe's great victories, but in the silences of his personal despair.

Joseph Campbell



Come in from the cold. Read  
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